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(51) INTL.CL.<sup>5</sup> H01M-002/10; H01M-006/50

(19) (CA) **APPLICATION FOR CANADIAN PATENT** (12)

(54) Retractable Battery Tray

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(57) 16 Claims

Notice: The specification contained herein as filed

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Abstract of the Disclosure

5 A retractable battery tray includes a supporting  
structure, a tray assembly, and a heating device. The  
support structure of the battery tray generally spans and  
attaches to two spaced apart supporting base structures  
of a telecommunications equipment cabinet and supports  
the tray assembly therebetween. One or more batteries  
are supported and carried on a tray member of the tray  
10 assembly and vertically ganged heavy-duty horizontally  
extending slide rails movably attach the tray member to  
the support structure. A closure panel attaches to the  
spaced apart supporting base structures to retainably  
conceal the tray in a retracted position. Positioned  
15 in the tray underneath the battery, the heating device  
includes a thin sheet-like heating pad sandwiched between  
a protective plate therebelow and an insulating sheet  
thereabove. The insulating sheet retains heat from  
the heating pad within the tray. The protective plate  
20 prevents the batteries from damaging the heating pad.

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The Invention Claimed is:

1. A movable battery tray apparatus for use with an equipment cabinet, said battery tray apparatus comprising: a tray assembly for carrying at least one battery, and a support assembly for supporting said tray assembly on said equipment cabinet; said tray assembly being attached to and movable relative to said support assembly, said tray assembly including a tray member and attachment means for attaching said tray member for movement relative to said equipment cabinet between an open position wherein said at least one battery is accessible for testing, servicing and replacement and a closed position wherein said at least one battery is enclosed by said tray and said equipment cabinet; said support assembly attaching to said equipment cabinet and to said tray assembly for supporting said tray assembly.

2. A movable battery tray apparatus according to claim 1 wherein said attachment means includes sliding rail means, said sliding rail means being attached to said tray member and to said support assembly and being extendable away from said support assembly for moving said tray member between said open and closed positions.

3. A movable battery tray apparatus according to claim 1 and further including an AC connection and means for controlling said AC connection for maintaining a predetermined charge on said at least one battery.

4. A movable battery tray apparatus according to claim 1, wherein said support assembly includes a pan bracket attached to said equipment cabinet and a support bracket attached to said tray assembly, and connectable to said pan bracket.

5. A movable battery tray apparatus according to claim 1 wherein said equipment cabinet includes a pair of spaced apart base portions supporting a cabinet portion, said support assembly supporting said tray assembly beneath said cabinet portion and between said base portions.

6. A movable battery tray apparatus according to claim 4 and further including a tying bracket for structurally connecting said support bracket to said pan bracket, said tying bracket providing weight transferring support between said support bracket and said pan bracket.

7. A movable battery tray apparatus according to claim 1 and further including a closure panel attaching to said support assembly for retainably concealing and protecting said battery tray assembly.

8. A movable battery tray apparatus according to claim 7 and further including tamper-proof fasteners for attaching said closure panel to said support assembly.

9. A movable battery tray apparatus according to claim 1 and further including heating means for selectively warming said at least one battery.

10. A movable battery tray apparatus according to claim 9 wherein said heating means includes a heating pad positioned to be in close proximity to said at least one battery.

11. A movable battery tray apparatus according to claim 10 and further including a protective member for preventing said battery from damaging said heating pad and an insulating member for inducing heat from said heating pad to flow upwardly through said battery; and wherein said heating pad is positioned underneath said battery and sandwiched between said protective member and said insulating member.

12. A movable battery tray apparatus according to claim 10 and further including thermostatic control means for automatically regulating the temperature of the heating pad.

13. A movable battery tray apparatus for movably positioning at least one relatively large back-up battery near equipment which depends on the back-up power supplied by said battery to provide emergency power; said battery tray apparatus comprising: a tray assembly for carrying at least one battery, heating means for selectively warming said at least one battery, and a support assembly for supporting said tray assembly and a battery retained therein relative to said equipment; said tray assembly including a tray member and means for moving said tray member relative to said support assembly.

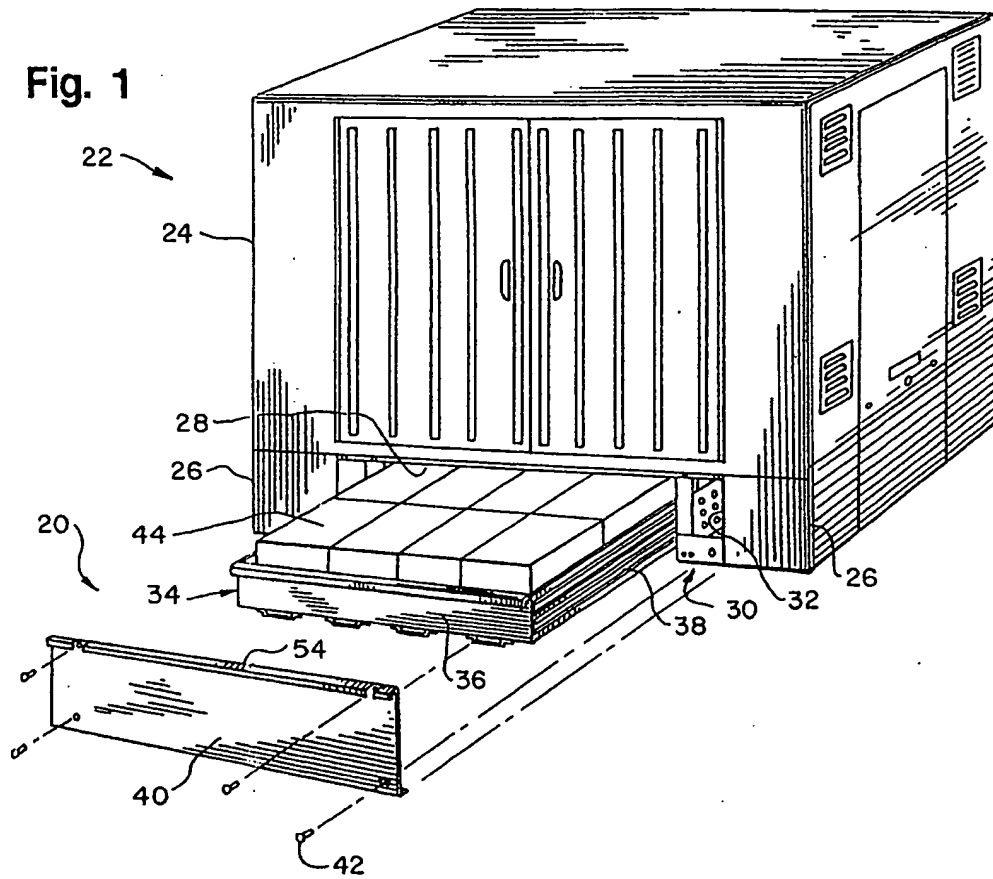
14. A movable battery tray apparatus according to claim 13 wherein said heating means includes a submergible heating pad positioned in close proximity to said at least one battery.

15. A movable battery tray apparatus according to claim 14 and further including a protective member for preventing said battery from damaging said heating pad and an insulating member for maintaining heat from said heating pad; and wherein said heating pad is positioned underneath said battery and sandwiched between said protective member and said insulating member.

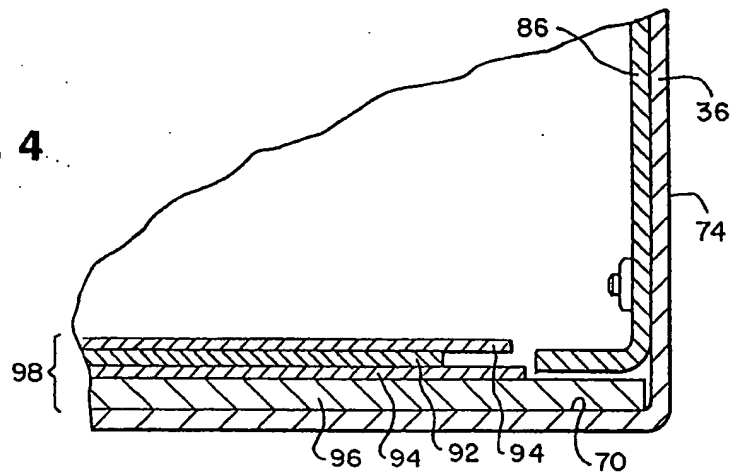
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16. A movable battery tray apparatus according to claim 14 and further including thermostatic control means for automatically regulating the temperature of the heating pad.

**Fig. 1**

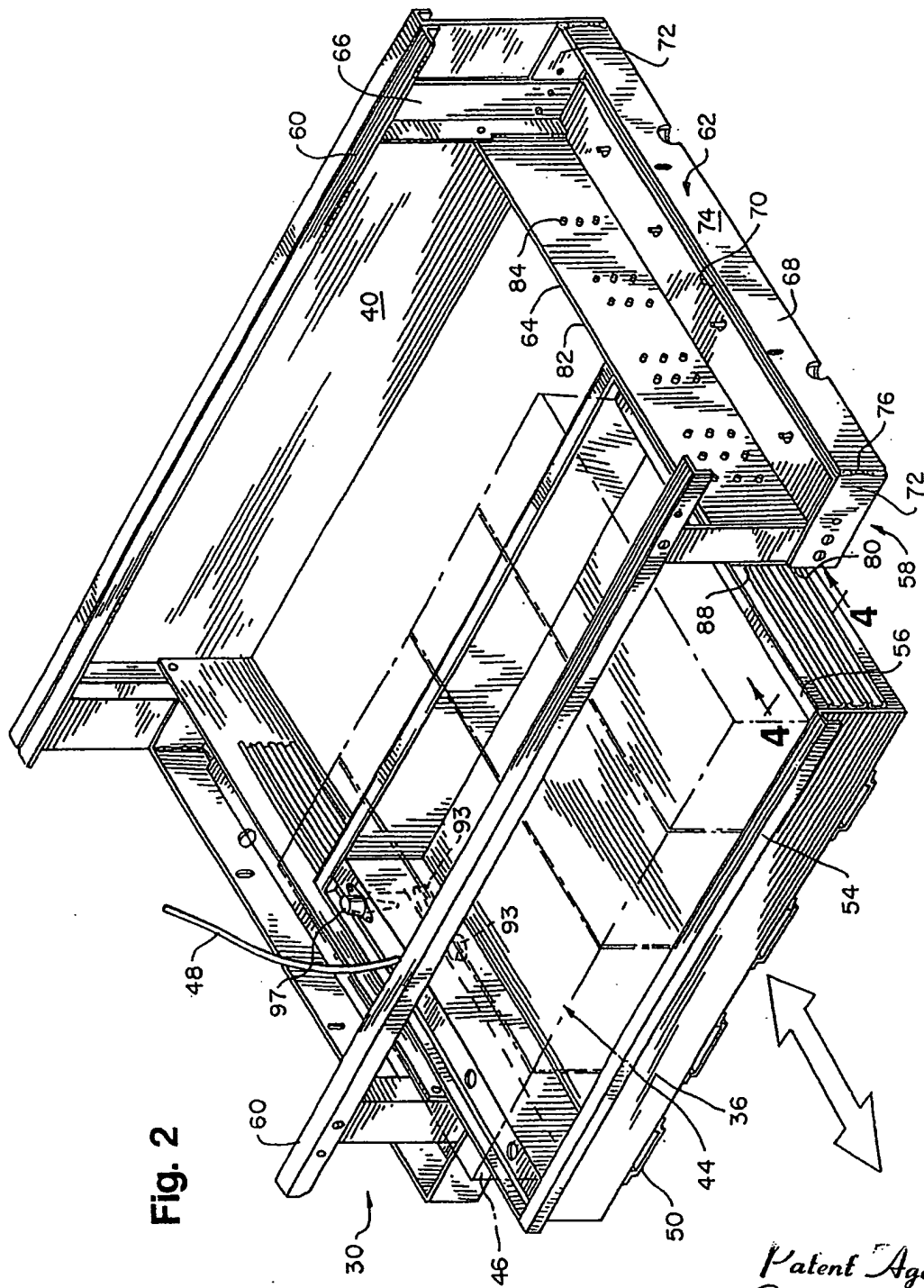


**Fig. 4**



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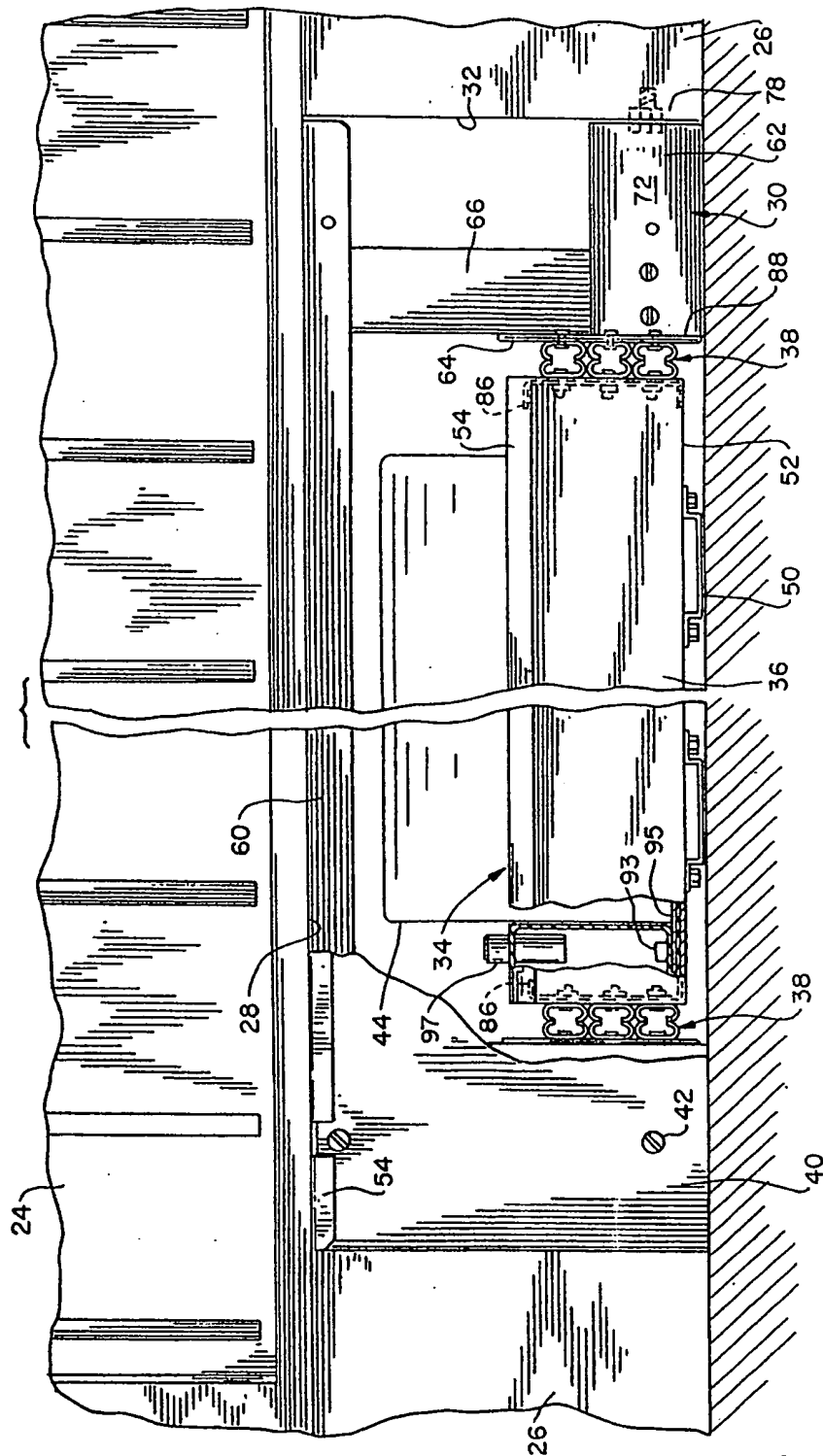




**Fig. 2**

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Fig. 3



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